

Patent Claims

1. A climate control method, by means of which the internal area temperature is always regulated to the nominal internal area temperature setting taking into account the respectively prevailing temperature of the external area from which the internal area medium is taken, by appropriate adjustment of the temperature of the flowing-in medium (the blowing-in temperature), with the medium being cooled down and/or heated if required before flowing in,

characterized by the following steps,

(Step S1) calculation of a nominal blowing-in temperature ($T_{\text{blowing-in-nom}}$) as a function of the outside temperature (T_A), the actual internal area temperature (T_I) and the nominal internal area temperature (T_{Inom}),

(Step S2) comparison of the calculated nominal blowing-in temperature ($T_{\text{blowing-in-nom}}$) with a minimum physically achievable blowing-in temperature ($T_{\text{blowing-in-min}}$),

(Step S3) if step S2 shows that the nominal blowing-in temperature ($T_{\text{blowing-in-nom}}$) is above the minimum blowing-in temperature ($T_{\text{blowing-in-min}}$), carrying out conventional climate control as a function of the actual internal area temperature (T_I), the nominal internal area temperature (T_{Inom}), the outside temperature (T_A) and, optionally, the solar radiation (q) and/or the vehicle speed by controlling the blowing-in temperature ($T_{\text{blowing-in}}$) and/or the air mass flow,

(Step S4), if the nominal blowing-in temperature ($T_{\text{blowing-in-nom}}$) is below the minimum blowing-in temperature $T_{\text{(blowing-in-min)}}$, determination of whether a new nominal internal area temperature ($T_{\text{Inom-new}}$) has been entered by at least one of the occupants via a nominal internal temperature setting device,

if no new nominal internal area temperature ($T_{\text{Inom-new}}$) has been found in S4, return to step S1

(Step S5) if a new nominal internal area temperature $T_{\text{Inom-new}}$ has been found in step S4, determination of a nominal internal temperature change (ΔT_{Inom}) from the difference between the new nominal internal area temperature ($T_{\text{Inom-new}}$) and the previous nominal internal area temperature ($T_{\text{Inom-old}}$),

(Step S6) determination of whether the nominal internal area temperature change (ΔT_{Inom}) has a value greater than zero,

if the nominal internal area temperature change (ΔT_{Inom}) has a value less than or equal to zero, return to step S1,

(Step S7) if the nominal internal area temperature change (ΔT_{Inom}) has a value greater than zero, calculation of a second nominal internal area temperature as a function of ΔT_{Inom} and T_A ,

(Step S8) selection of the maximum value of the nominal blowing-in temperature ($T_{blowing-in-nom}$) and of the second nominal blowing-in temperature ($T_{blowing-in-nom2}$),

(Step S9) with a decision then being made as to whether the second nominal blowing-in temperature ($T_{blowing-in-nom2}$) has been selected,

if the second nominal blowing-in temperature ($T_{blowing-in-nom2}$) has not been selected in step 9, return to step S1,

(Step S10), if the second nominal blowing-in temperature ($T_{blowing-in-nom2}$) has not been selected in step S9, the outlet valve is closed, and then return to step S1.

2. The climate control method as claimed in claim 1, characterized in that the calculation of the second nominal blowing-in temperature ($T_{blowing-in-nom2}$) is carried out as a function of the outside temperature (T_A) and of the nominal internal area temperature change (ΔT_{Inom}) on the basis of reference curves determined by measurement.

3. The air-conditioning control method as claimed in claim 1 or 2, characterized in that if there is no previous nominal internal area temperature ($T_{Inom-old}$), a temperature value which is regarded as being comfortable is selected instead.

4. The air-conditioning control method as claimed in claim 1, 2 or 3, characterized in that the temperature value is 22°C.

5. The air-conditioning control method as claimed in one of claims 1 to 4, characterized in that the method is carried out separately in a multiple zone air-conditioning system for each separately air-conditioned vehicle area.